

CLAIMS

1. An inclination measuring device comprising:

an inclination tracking device configured to pass over the object whose angle
of inclination is to be mapped, said object having a plurality of elements; and
5 a sensor probe in communication with said inclination tracking device, said
sensor probe configured to sense the position of each of said plurality of
elements.
2. The inclination measuring device according to claim 1, wherein said object to be
mapped is the spine of a person and said elements are vertebrae.
- 10 3. The inclination measuring device according to claim 1, wherein said sensor
probe is fixed in relation to said inclination tracking device.
4. The inclination measuring device according to claim 1, wherein said sensor
probe comprises optical sensors.
5. The inclination measuring device according to claim 1, wherein said sensor
15 probe is configured to be removable from said inclination tracking device and is
configured to be attachable to at least one finger of a user's hand.
6. The inclination measuring device according to claim 1, wherein said sensor
probe further comprises a position sensor and tracking system in communication
therewith.
- 20 7. The inclination measuring device according to claim 1, wherein said inclination
tracking device comprises one of a group of devices for calculating the angles of
inclination including gyroscopic inclinometer device, inclinometer, accelerometer, a
magnetic field generator and Optical 3D tracking systems.

8. The inclination measuring device according to claim 1, wherein said inclination tracking device comprises a processing unit and at least one of a group of devices including a data storage device and a display screen in communication with said processing unit.
- 5 9. The inclination measuring device according to claim 8, wherein said inclination tracking device further comprises a transmitting device for transmitting data to an external source.
10. The inclination measuring device according to claim 8, wherein said inclination tracking device comprises an inductor in communication with said processing unit for
10 supplying power via a wireless connection to a unit for recharging the inclination measuring device.
11. The inclination measuring device according to claim 2, wherein said sensor probe is configured to record at least one reading for each vertebrae.
12. The inclination measuring device according to claim 8, wherein said processing
15 unit is programmed to record data including maximal trunk rotation measurements of at least one of group of vertebrae, including the upper thoracic, mid-thoracic, and lumbar regions of the spine.
13. The inclination measuring device according to claim 12, wherein said processing unit is programmed to compute and display the data showing at least one of a group
20 including Coronal, Sagittal and Apical views of the spine.
14. The inclination measuring device according to claim 12, wherein said processing unit is programmed to compute and display the maximum inclination and/or location of the vertebrae in each of the upper thoracic, lower thoracic and lumbar regions of the spine.

15. The inclination measuring device according to claim 2, wherein said sensor probe is configured to record at least one of a group comprising the vertebral level of the trunk rotation measurements, the direction of inclination of each vertebrae, the difference in height between left and right of each vertebrae and the length of the spine.
- 5 16. The inclination measuring device according to claim 1, wherein said inclination measuring device is configured to measure the angular deviation irrespective of the position of object being measured.
17. The inclination measuring device according to claim 1, wherein said inclination tracking device comprises a substantially rectangular housing having an indentation
10 formed in the center of one edge of said housing.
18. The inclination measuring device according to claim 17, wherein said inclination tracking device comprises a pair of tracking devices attached on either side of said indentation, along the bottom edge of rectangular said element.
19. The inclination measuring device according to claim 7, wherein said inclination
15 tracking device comprises markers configured to be used in conjunction with said Optical 3D tracking systems to identify and calculate inclination angles of the vertebrae.